

## UCHL1 Protein, Human (His)

<b>Cat. No.:</b>	HY-P71096
<b>Synonyms:</b>	Ubiquitin Carboxyl-Terminal Hydrolase Isozyme L1; UCH-L1; Neuron Cytoplasmic Protein 9.5; PGP 9.5; PGP9.5; Ubiquitin Thioesterase L1; UCHL1
<b>Species:</b>	Human
<b>Source:</b>	E. coli
<b>Accession:</b>	P09936 (M1-A223)
<b>Gene ID:</b>	7345
<b>Molecular Weight:</b>	Approximately 26.0 kDa

### PROPERTIES

<b>AA Sequence</b>	<p>           M Q L K P M E I N P    E M L N K V L S R L    G V A G Q W R F V D    V L G L E E E S L G            S V P A P A C A L L    L L F P L T A Q H E    N F R K K Q I E E L    K G Q E V S P K V Y            F M K Q T I G N S C    G T I G L I H A V A    N N Q D K L G F E D    G S V L K Q F L S E            T E K M S P E D R A    K C F E K N E A I Q    A A H D A V A Q E G    Q C R V D D K V N F            H F I L F N N V D G    H L Y E L D G R M P    F P V N H G A S S E    D T L L K D A A K V            C R E F T E R E Q G    E V R F S A V A L C    K A A         </p>
<b>Appearance</b>	Solution.
<b>Formulation</b>	Supplied as a 0.2 µm filtered solution of 20 mM Tris-HCl, 250 mM NaCl, 1 mM DTT, 10% Glycerol, pH 7.5.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	N/A
<b>Storage &amp; Stability</b>	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
<b>Shipping</b>	Shipping with dry ice.

### DESCRIPTION

<b>Background</b>	<p>UCHL1, a multifaceted deubiquitinase, orchestrates the regulation of diverse cellular processes, including the maintenance of synaptic and cardiac functions, modulation of inflammatory responses, and osteoclastogenesis. Functioning as a pivotal regulator, UCHL1 interferes with the ubiquitination of various proteins, such as WWTR1/TAZ, EGFR, HIF1A, and beta-site amyloid precursor protein cleaving enzyme 1/BACE1. Additionally, it exhibits precision in recognizing and hydrolyzing the peptide bond at the C-terminal glycine of ubiquitin, ensuring the maintenance of a stable monoubiquitin pool—a crucial requirement for the proper functioning of the ubiquitin-proteasome and autophagy-lysosome pathways. UCHL1's influence extends to amyloid precursor protein/APP processing, where it promotes BACE1 degradation, leading to a reduction in</p>
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amyloid beta production. Moreover, UCHL1 actively participates in immune responses by fine-tuning the trafficking of MHC I molecules to cross-presentation compartments, essential for generating Ag-MHC I complexes. Through 'Lys-48'-linked deubiquitination, it mediates the stabilization of the transcriptional coactivator WWTR1/TAZ, inhibiting osteoclastogenesis. UCHL1 further demonstrates its regulatory prowess by deubiquitinating and stabilizing EGFR to prevent degradation and activate downstream mediators, as well as by modulating oxidative activity in skeletal muscle through the regulation of key mitochondrial oxidative proteins. Additionally, UCHL1 enhances the activity of hypoxia-inducible factor 1-alpha/HIF1A by abrogating VHL E3 ligase-mediated ubiquitination, consequently inhibiting its degradation.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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